

## CLAIMS:

1. A method of analyzing an organic medium potentially including defects within a noisy structure, such that said medium is excited by ultrasonic signals emitted by a set of N transducers and focused at a given depth at M distinct successive excitations in order to obtain an image of said depth after reception of the responses from the medium, such that it also includes the steps of:

- constructing a rectangular response matrix of dimension  $N \times M$ , a coefficient  $K_{nm}$  of which represents the response of the medium received by the transducer n following an excitation m,
- decomposition of said response matrix into singular values,
- use of the singular vectors corresponding to said singular values in order to locate singular zones corresponding to defects in the medium.

2. An analysis method as claimed in claim 1, according to which a response matrix  $K_{nm}$  is obtained for a plurality of frequencies.

3. An analysis method as claimed in one of claims 1 or 2, according to which M successive excitations are carried out for a plurality of depths of said medium.

4. An ultrasonic medical imaging apparatus intended for analyzing a medium potentially including defects within a noisy structure, said apparatus including a set of transducers for emitting ultrasonic signals focused at a given depth according to M distinct successive excitations, an image formation module in order to obtain an image of said depth after reception of the responses from the medium, such that it includes a module for exploiting said responses in order:

- to construct a rectangular response matrix of dimension  $N \times M$ , a coefficient  $K_{nm}$  of which represents the response of the medium received by the transducer n following an excitation m,
- to decompose said response matrix into singular values,

- to use the singular vectors corresponding to said singular values in order to locate singular zones corresponding to defects in the medium.

5. An apparatus as claimed in claim 4, such that a response matrix  $K_{nm}$  is  
5 constructed for a plurality of frequencies.
6. An apparatus as claimed in one of claims 4 or 5, according to which M successive excitations are carried out for a plurality of depths of said organic medium.
- 10 7. A computer program product intended to be executed by a processor used within an apparatus as claimed in one of claims 4 to 6, characterized in that it includes a set of instructions for executing the steps of a method of analyzing an organic medium as claimed in one of claims 1 to 3.